



**ENGINEERING OPERATIONS COMMITTEE  
MEETING MINUTES  
OCTOBER 8, 1999 - 9:00 A.M.  
EXECUTIVE CONFERENCE ROOM**

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Present: C. T. Maki J. D. Culp C. Roberts  
P. F. Miller J. D. O'Doherty S. Bower  
T. E. Davies J. W. Reincke T. Fort  
M. H. Frankhouse

Guests: C. Bleech T. Myers J. T. LaVoy  
M. Van Port Fleet

**OLD BUSINESS**

**1. Approval of the Minutes of the September 2, 1999, Meeting - C. T. Maki**

Minutes of the September 2, 1999, meeting were approved with the following amendment to New Business, Item 2 - Cantilever Sign Supports:

Biannual inspections of cantilever signs indicated horizontal gusset plate terminations on some supports are cracking. The majority of crack occurrences are on Type G and H cantilevers. Recently, 55 cantilevers have been removed and replaced with temporary breakaway ground mount signs. The permanent installations will be done by contract at an estimated \$1.6 million. The letting date of this contract is dependent on the availability of funding.

A retrofit procedure for cantilever signs has been designed and tested. It is recommended that funding be established for retrofitting the remaining 300 plus Type G and H cantilevers. The Construction and Technology Division estimated cost is \$200,000, plus contingencies.

**ACTION:** Effective September 2, 1999, the use of Type G and H cantilevers is to be discontinued. In their place, Type D or E cantilevers, Type C or D trusses, ground mounts, or bridge mounts are to be used.

If a long arm is required for appropriate sign placement, use a Type C or D truss or bridge mount.

If a Type G or H cantilever fails the biannual inspection, the cantilever in questions must be replaced with a Type D or E cantilever, a Type C or D truss, a ground mount, or a bridge mount.

Funding needs to be provided to retrofit and repair the remaining Type G and H cantilever gusset plates. The estimated cost is \$200,000, plus engineering and contingencies. The Maintenance Division will investigate possible funding sources.

The biannual inspection program for cantilevers will continue.

The Maintenance Division will assess updating needs for the sign support inventory data base.

2. **EOC Approval of Division Standards, Standard Plans, Procedure Manuals, Sampling Guides, Test Methods, Traffic and Safety Notes, etc. - C. T. Maki**

At the September 2, 1999, EOC meeting the Construction and Technology Division presented a list of the division's documents that are not currently reviewed and approved by EOC. At this month's meeting, the other Lansing divisions submitted their comprehensive lists. There needs to be a formal clearinghouse for the review of these documents and the internal review process (within the divisions) must be consistent.

**ACTION:** All standards and procedures manuals will come to EOC for review when next revised. EOC will determine on a case-by-case basis whether this review will continue to be required for future revisions.

3. **Vertical Clearance - M. Van Port Fleet**

The FHWA sent a letter to Tom Maki reaffirming the Department of Defense requirement for the 16 ft vertical clearance for all bridges on the interstate system. Tom Fort expressed his belief that the department should take a serious approach to achieving this requirement and that the procedures developed for ensuring compliance with the AASHTO vertical clearance standards should be approved. However, at issue is the exception process on 3R projects for all freeways.

**ACTION:** Mark Van Port Fleet will work with Tom Fort to make refinements to the proposed procedures (operating instructions). The exception process will be clearly stated in the procedures. The final document will be returned to EOC for approval.

NEW BUSINESS

1. **MSU Final Report, *An Evaluation of Speed Control Techniques in Work Zones (Work Zones 2)* - J. D. O'Doherty/T. Myers**

The research study evaluated the effectiveness of various speed control strategies in freeway work zones. The strategies included police presence, radar speed trailers, and changeable message signs. Changeable message signs and speed trailers showed limited promise in reducing speeds compared to police presence in the work zone influence area.

**ACTION:** The research report was accepted.

2. **Ride Quality for Two Course Bituminous Overlay Projects - M. Frankhouse**

Unless required by the contract, contractors do not currently measure and evaluate ride quality (RQ) on two course overlay projects. There are sufficient data to support a percentage improvement that will correlate to an equitable incentive on two course overlays.

The MDOT/Industry Ride Quality Committee developed a special provision to use on these overlay projects and bases RQ on a percent improvement from the original pavement ride quality. It is proposed to use the RQ special provision on pilot projects in 2000 to access success.

**ACTION:** Based on review comments, the pay item for ride quality measurement will be removed from this special provision and the noted editorial problems on page four will be corrected.

The special provision for RQ is approved for the remaining 2000 projects.

3. **Formation of a Ride Quality Committee - M. Frankhouse**

The Ride Quality Task Force, currently a branch of the MDOT/MAPA Partnering Committee, does not represent all the current stakeholders in the development and evaluation of ride quality specifications. All together MAPA, MCPA, AUC, MRBA, and MRPA have interests in participating in RQ discussions related to roadways and bridges.

The proposal suggests dissolving the RQ Task Force and replacing it with a new, expanded committee that would report to EOC.

**ACTION:** The recommendation is approved. (Dave Calabrese will be the FHWA representative.)

4. **Pavement Selection: US-23; M-59 to Fausett Road C.S. 47014, J.N. 43499 - S. Bower/C. Bleech**

A Life Cycle Cost Analysis was performed on the two reconstruction alternates, including Alternate 1, rubbilize and bituminous overlay, and Alternate 2, unbonded jointed plain concrete overlay.

The Pavement Selection Review Committee reviewed the analysis and recommends that Alternate 2 having the lowest Equivalent Uniform Annual Cost be approved by EOC.

Alternate 2 is approved. The pavement design and cost analysis are as follows:

180 mm	Jointed Plain Concrete Pavement (4 m Joint Spacing)
140-180 mm	Jointed Plain Concrete Shoulder
25 mm	Bond Breaker (Bit Mix 36A)
229 mm	Repaired Existing Concrete Pavement
100 mm	Underdrains

Present Value Initial Construction Costs	\$242,766/Directional Kilometer
Present Value Initial User Costs	\$166,211/Directional Kilometer
Present Value Maintenance Costs	\$27,761/Directional Kilometer

Equivalent Uniform Annual Cost	\$26,284/Directional Kilometer
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(Signed Copy on File at C&T/Secondary)

Jon W. Reincke, Secretary  
Engineering Operations Committee

JWR:kat

cc: EOC Members  
Region Engineers

J. R. DeSana	R. J. Risser, Jr. (MCPA)	J. Murner (MRPA)	T. L. Nelson
R. J. Lippert, Jr.	A. C. Milo (MRBA)	J. Ruskowski	R. D. Till
D. L. Smiley	J. Becsey (MAPA)	C. Libiran	M. Frierson
M. Nystrom (AUC)	D. Hollingsworth (MCA)	G. J. Bukoski	C. W. Whiteside
M. Newman (MAA)	J. Steele (FHWA)	K. Rothwell	M. P. Krause